

21 [0030] Now as shown in FIG. 2F, the spaces between the semiconductor regions 25A and 25B are filled with a dielectric layer 26 (e.g., SiO₂), which may be formed with a high density plasma chemical vapor deposition (HDP-CVD) process. The dotted line in FIG. 2F indicates that dielectric layer 26 is filled to any suitable height, including above the upper edge of semiconductor regions 25A and 25B. Preferably, dielectric layer 26 is filled up to and no higher than the upper edge of the semiconductor regions to minimize the amount of subsequent planarization needed. This tends to minimize non-uniformities across the entire wafer. Further details of this technique are discussed in commonly-assigned U.S. Patent Application Serial No. 09/776000 (pending) to Vyvoda et al., filed concurrently herewith, which is hereby incorporated by reference herein in its entirety.

IN THE CLAIMS

Please cancel claims 15-29 without prejudice. Please amend claims 1, 30, and 44 as follows. Appendix B contains a marked-up version of these claims showing the changes made.

1. (Amended) A wafer having a surface, the wafer comprising:

72 a plurality of regions of semiconductor and dielectric exposed at the surface of the wafer after chemical mechanical planarization, the semiconductor regions formed over a substrate, wherein

the semiconductor regions have a total surface area that is less than or equal to a first fraction of a total surface area of the wafer and each of the semiconductor regions have a shortest surface dimension that is less than or equal to a first width,

X2
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the first fraction and the first width ensuring that the surface of the wafer can attract enough water to wet sufficiently allowing removal of residual particles therefrom.

30. (Amended) A wafer having a surface, the wafer comprising:

means for attracting water to the surface of the wafer; and

X3

means for repelling water from the surface of the wafer comprising regions above a substrate that have a combined surface area that is less than or equal to a first fraction of a surface area of the wafer,

wherein each of the regions has a shortest surface dimension that is less than or equal to a first width, and the first fraction and the first width ensure that the surface of the wafer can attract enough water to wet sufficiently allowing removal of residual particles therefrom.

44. (Amended) A wafer having a surface, the wafer comprising:

X4

a plurality of regions of hydrophobic material and hydrophilic material exposed at the surface of the wafer after chemical mechanical planarization, wherein the regions of hydrophobic material are deposited over a substrate and have a total surface area that is less than or equal to a first fraction of a total surface area of the wafer, and each of the regions of hydrophobic material have a shortest surface dimension that is less than or equal to a first width, the first fraction and the first width ensuring that the surface of the wafer can attract enough water to wet sufficiently allowing removal of residual particles therefrom.
